UTAH DEPARTMENT OF HEALTH
Arthritis Program

The Burden of Arthritis In Utah

Findings from the 2005 Utah Behavioral Risk Factor Surveillance System

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From the Director

Dear Reader:

It is my pleasure to present the findings from the 2005 Utah Behavioral Risk Factor Surveillance System (BRFSS) describing the burden of arthritis in Utah, our third such report. The 2005 Utah inpatient hospital discharge data, which documents inpatient hospitalizations and charges for patients with a primary diagnosis of arthritis in Utah, are included as a supplement to the BRFSS data.

In 2005, 22.7 percent of Utah adults (395,000) reported having some form of arthritis. This is a significant health problem in our state, and will become even more common as the population of Utah ages. However, through collaborative partnerships such as encouraging participation of persons suffering from arthritis in the Arthritis Foundation's Aquatics, Exercise and Self-Help programs, we can reduce the burden that arthritis imposes on our citizens.

This report will be used to increase awareness of arthritis as a public health issue in Utah and to provide direction for future planning. The report will also serve as a tool to help improve the quality of life for Utahns affected by arthritis.

I hope you find this report to be beneficial. If you have comments or suggestions, please contact Nicole Bissonette, MPH, CHES, Utah Arthritis Program Manager, by e-mail at nicolebissonette@utah.gov or at (801) 538-9458.

Sincerely,

David N. Sundwall, MD
Executive Director
Utah Department of Health

Acknowledgements

The Utah Department of Health extends its appreciation to those who contributed their time and expertise to develop this report. Because of their efforts, this report may increase the awareness of arthritis as a health issue in Utah, and provide direction for implementing the interventions needed to improve the health-related quality of life for Utah adults with arthritis.

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Executive Summary

This report, the third since 2000 to describe the burden of arthritis in Utah, presents 2005 Behavioral Risk Factor Surveillance System (BRFSS) data. These data describe the prevalence of arthritis in Utah overall, and by gender, age, race/ethnicity, education, and income. Other factors such as activity limitation, physical activity, overweight and obesity, health status, and quality of life are also examined.

This report also presents the 2005 Utah inpatient hospital discharge data that describes inpatient hospitalizations and hospital charges for patients with a primary diagnosis of arthritis. (See Appendix A)

These data are key to understanding the burden of arthritis in Utah and its impact on adults with arthritis. It can be used for planning future programs to slow the progress of arthritis in Utah. The challenge now is to use these data to guide public and clinical interventions in an attempt to reduce the prevalence and burden of arthritis in Utah.

Highlights

Based on the 2005 Utah BRFSS survey data, Utah adults with arthritis are likely to be:

- female
- overweight or obese
- less healthy mentally and physically, and
- less physically active

Prevalence of Arthritis in Utah

- One in five Utah adults age 18 and older (22.7%; or 395,088) reported having arthritis in 2005.

Age-adjusted Prevalence of Arthritis by Local Health District

- The age-adjusted prevalence rate of arthritis in the Central Utah Health District (30.8%) was significantly higher than the age-adjusted rate in the U.S. and Utah for 2003-2005.

Arthritis by Gender and Age Group

- 25.8 percent of Utah women (224,000) reported arthritis compared to 19.5 percent of Utah men (170,000).
- Arthritis prevalence ranges from 7.8 percent among Utah adults 18-34 to a high of 53.6 percent among Utah adults 65-74.

Arthritis by Education Level and Income

- 29.8 percent of adults with a high school education and 24.0 percent of adults with less than a high school education reported arthritis, compared to 29.1 percent among persons who reported some college and 20.7 percent among persons who reported a college education.
- Among persons with an annual income of less than $20,000, 25.2 percent stated they had arthritis. As income increased to $50,000 or more, the percentage of persons reporting arthritis decreased to 21.1 percent.

Arthritis by Weight Category

- Utah adults who were obese were 1.5 times more likely to report arthritis than persons reporting a normal body weight.
- Among persons with arthritis, 33.1 percent reported receiving counseling from their doctor or health care provider to lose weight.

Health Status

- Among adults with arthritis, 26.6 percent reported fair or poor health, 32.6 percent reported seven or more days of poor physical health in the past 30 days, and 22.5 percent reported seven or more days of poor mental health in the past 30 days.

Physical Activity/Exercise

- Adults with arthritis were more likely to report being inactive (26.8%) than adults without arthritis (15.9%).
- Among adults with arthritis, 52.5 percent reported their doctor told them to exercise.

Activity Limitation and Ability to Work

- Utah adults with arthritis were 13 times more likely to report that pain limited their activities for 15 to 30 days during the past month (27.2%) than adults without arthritis (2.1%).
- Nearly one-third of persons with arthritis aged 18-64 reported arthritis or joint symptoms affected whether they worked and the type of work or the amount of work they did (32.4%).

Arthritis Education Programs

- Among adults who reported arthritis, 13.4 percent stated they had taken an arthritis education course.

Introduction

Obtaining accurate and reliable arthritis data at the state and local levels allows for accurate measurement of the prevalence of arthritis. Such data helps set public health priorities and focus the use of limited public health resources most effectively. It also helps us understand who is affected, who is at risk, what health behaviors increase that risk, which occupations and activities increase that risk, and how the disease affects physical health, quality of life, and economics. Thus, surveillance for arthritis is critical for understanding arthritis, targeting interventions, developing policy, and setting priorities for research.

Background

The word arthritis means inflammation of a joint and refers to over 100 different diseases and conditions including osteoarthritis, rheumatoid arthritis, fibromyalgia, systemic lupus erythematosus, gout and bursitis. Arthritis and its related disabilities may cause pain, stiffness and swelling, not just in the joints but in other supporting structures of the body such as the muscles, tendons, ligaments and bones.

Arthritis also causes enormous economic, social and psychological burdens for individuals with arthritis, their families, and the health care system. Although some of the effects of arthritis are easily converted into economic expressions such as lost wages and medical care costs, many effects, such as pain, reductions in daily housekeeping activities or the inability to enjoy leisure activities, are not determined easily.

The prevalence of self-reported, doctor-diagnosed arthritis in the U.S. is projected to increase from 47.8 million in 2005 to nearly 67 million by 2030 (25% of the adult population). By 2030, projections estimate that 25 million (9.3% of the adult population) will report arthritis-attributable activity limitations. In 2030, greater than 50 percent of arthritis cases will be among adults older than 65. However, adults 45 to 64 will account for almost one-third of cases.[1] It is important for clinicians and other health care providers to understand the future impact of arthritis so they can respond to the challenges.

Arthritis Definition and Prevalence of Arthritis in Utah

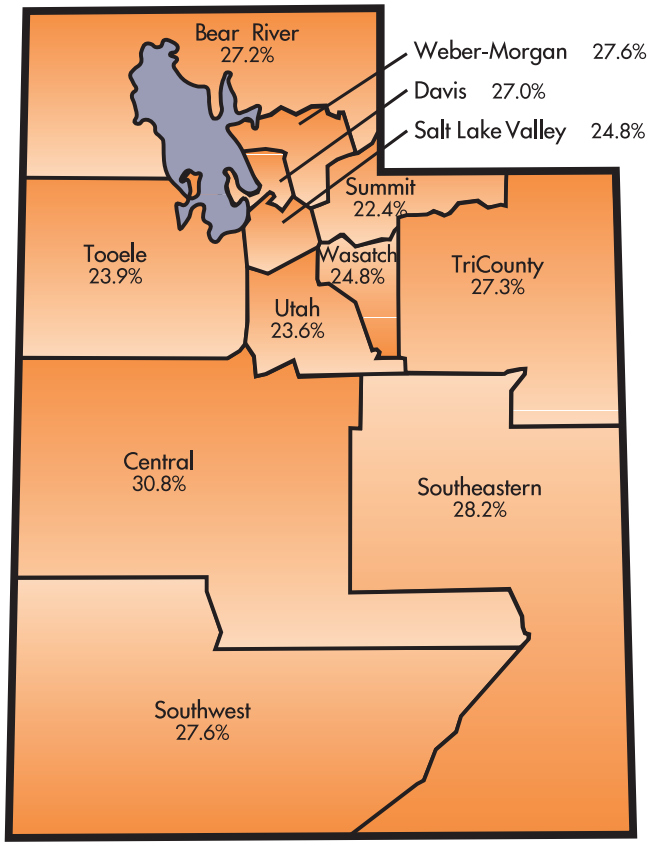
Beginning with the 2002 BRFSS survey, the Centers for Disease Control and Prevention (CDC) recommended that surveillance estimates for arthritis focus on doctor-diagnosed arthritis only. (See Appendix B)

One in five Utah adults age 18 and older (22.7%; or 395,088) reported having arthritis in 2005.

Focusing on persons who report doctor-diagnosed arthritis allows the Utah Department of Health and others to target those persons who are more likely to have arthritis. Therefore, arthritis refers to doctor-diagnosed arthritis in this report. One in five Utah adults age 18 and older (22.7% or 395,088) reported having arthritis in 2005.

1

Age-adjusted Percentage of Adults Reporting Arthritis by Local Health District



Source: 2003 & 2005 Utah BRFSS Survey
Age-adjusted to the U.S. 2000 standard population

Age-adjusted Prevalence of Arthritis by Local Health District

Because age affects the likelihood of having arthritis, it is beneficial to adjust for the effect of age when comparing populations. This helps determine if a certain population has factors that contribute to arthritis prevalence other than the effect of age.

After adjusting for age, the prevalence of arthritis in Utah (25.7%) was similar to the rate in the U.S. (26.1%) for 2003-2005. However, the age-adjusted prevalence rate of arthritis in the Central Utah Health District (30.8%) was notably different than the age-adjusted rate in the U.S. and Utah. (See Figure 1)

The age-adjusted prevalence of arthritis in the Central Utah Health District (30.8%) was significantly higher than the age-adjusted rate in the U.S. and Utah for

Prevalence of Arthritis by Gender and Age Group

While arthritis affects both men and women, women are more likely to report arthritis. In 2005, 25.8 percent of Utah women (224,000) reported arthritis compared to 19.5 percent of Utah men (170,000).

Although arthritis affects Utahns of all ages, some age groups are more likely to be affected. The prevalence of self-reported arthritis ranges from 7.8 percent among 18 to 34 year-olds, to 53.6 percent among those 65-74. Prevalence increases significantly in men and women aged 50 and over. Utah women were more likely to report arthritis for all age groups except the age group 18-34, and especially after age 50. (See Figure 2 and Appendix C)

Utah women were more likely to report arthritis for all age groups except the age group 18-34, and especially after age 50.

Children and Arthritis

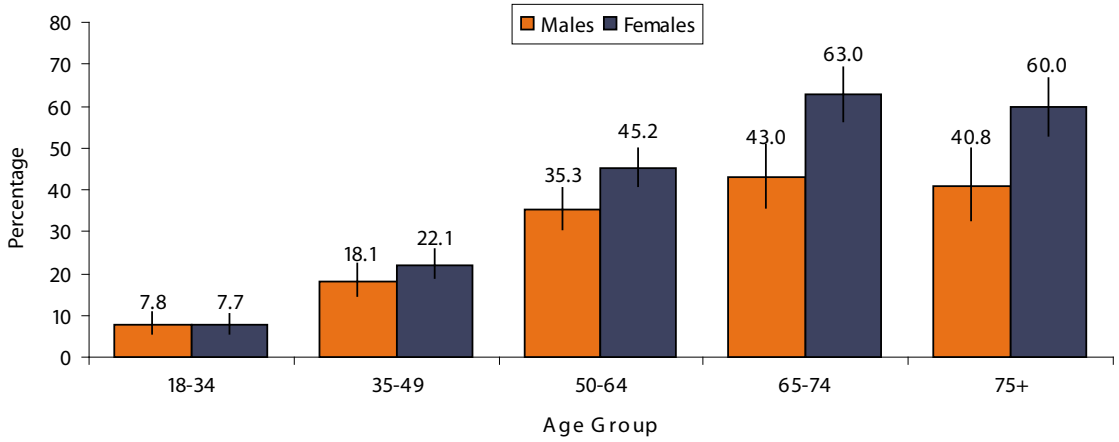
People of all ages are affected by arthritis, including children and teens. Juvenile rheumatoid arthritis is one of the most common chronic illnesses of childhood and adolescence.[2] According to the 2003 Utah Health Status Survey, there were 1,700 children age 17 or less who had been diagnosed with arthritis.

Age-adjusted Arthritis Prevalence by Education Level and Income

The age-adjusted prevalence of arthritis varies by education level. (See Figure 3) 29.8 percent of adults with a high school education and 24.0 percent of adults with

2

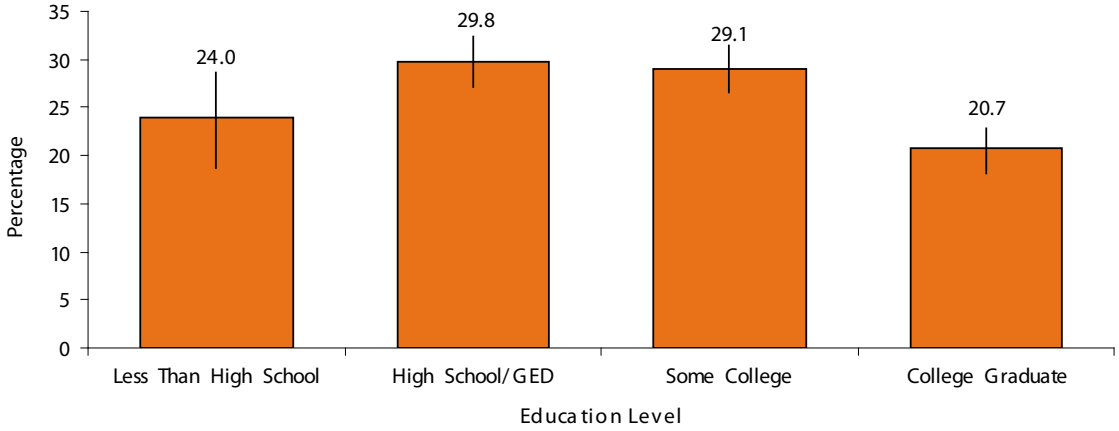
Prevalence of Arthritis by Age Group and Gender, Utah, 2005



Source: Utah BRFSS Survey

3

Age-adjusted Prevalence of Arthritis by Education Level, Utah, 2005



Source: Utah BRFSS Survey

less than a high school education reported arthritis, compared to 29.1 percent among persons who reported some college and 20.7 percent among persons who reported a college education.

Persons who reported a college education were least likely to report arthritis.

There is an opposite relationship between income and the prevalence of arthritis. Among persons with an annual income of less than $20,000, 25.2 percent stated they had arthritis. As income increased to $50,000 or more, the percentage of persons reporting arthritis decreased to 21.1 percent. It is not clear if modifying income reduces the risk of arthritis.[3] (See Figure 4)

As income increases, the percentage of persons reporting arthritis decreases.

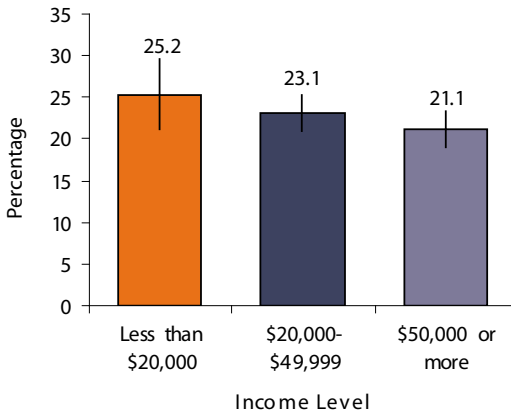
Arthritis Prevalence by Weight Category

Weight type is categorized into normal, overweight and obese by using body mass index (BMI). BMI is defined as weight in kilograms divided by height in meters squared. A normal weight is a BMI of 19 and less than 25, overweight is a BMI of 25 and less than 30. Obesity is a BMI of 30 or greater. (See Appendix D) Utah adults who were obese were 1.5 times more likely to report arthritis than persons who reported a normal body weight. (See Figure 5)

Utah adults who were obese were 1.5 times more likely to report arthritis than persons who reported a normal body

4

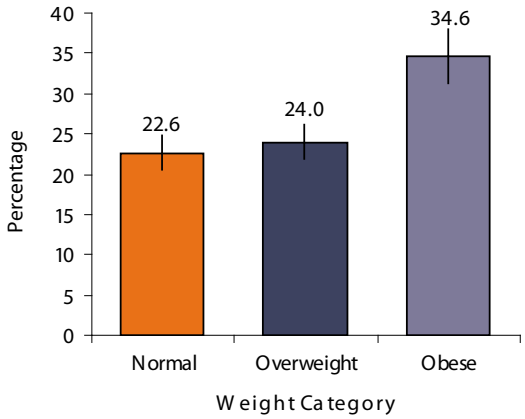
Prevalence of Arthritis by Income, Utah, 2005



Source: Utah BRFSS Survey

5

Prevalence of Arthritis by Weight Category, Utah, 2005



Source: Utah BRFSS Survey

Arthritis Risk Factors

Weight Management

Maintaining an appropriate weight lowers the risk for arthritis. Weight management and weight loss are the most effective interventions for preventing joint diseases and disabilities.[4] Among persons with arthritis, 33.1 percent reported receiving counseling from their doctor or health care provider to lose weight.

Maintaining an appropriate weight lowers the risk for arthritis.

Health Status and Physical Health

Utah adults with arthritis were nearly three times as likely to report being in fair or poor health than those without arthritis (26.6% vs. 10.2%). They were also three times more likely than persons without arthritis to report experiencing seven or more days in the last month when their physical health was not good (32.6% vs. 10.6%). (See Figure 6)

Mental Health

One in five Utah adults with arthritis (22.5%) reported seven or more days of poor mental health in the past month compared to one in eight adults (13.4%) without arthritis. (See Figure 6)

Utah adults with arthritis were more likely to report fair or poor health and to experience seven or more days when their physical health and/or mental health were not good during the last month.

Physical Activity/Exercise

Adults with arthritis were more likely to report being inactive (26.8%) compared to persons without arthritis (15.9%). (See Figure 6) More than half of adults with arthritis (52.5%) reported a doctor or other health care provider had ever suggested physical activity or exercise to manage their arthritis.

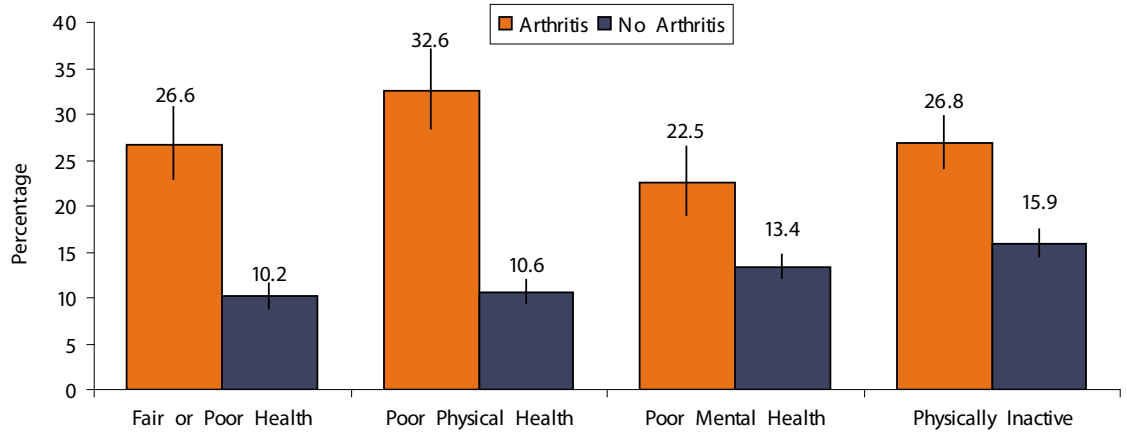
Among overweight and obese adults with arthritis, more than half (55.3%) were advised by their doctor or health care provider to engage in physical activity.

Activity Limitation and Ability to Work

When asked if arthritis or joint symptoms limited their usual activities in any way, more than one-third (39.5%) of Utah adults with arthritis reported limiting their usual activities.

6

Impact of Arthritis on Health-related Quality of Life, Utah, 2005



Source: Utah BRFSS Survey

Adults with arthritis were more likely to report being inactive despite the fact that over half were told by a health care provider to engage in physical activity.

Pain appears to play a lead role in activity limitation for people with arthritis. Utah adults with arthritis were 13 times more likely to report that pain limited their activities for 15 to 30 days during the past month (27.2%) than adults without arthritis (2.1%). Adults with arthritis were less likely to report no days when pain limited their activities during the past month than adults without arthritis (44.6% vs. 80.7%).

Pain appears to play a lead role in activity limitation. Utah adults with arthritis were 12 times more likely to report pain limited their activities for 15 to 30 days during the past month (27.2%) than adults without arthritis (2.1%).

When persons with arthritis or joint symptoms were asked to describe their ability to function on the day they were surveyed, 72.4 percent reported they could do "everything" or "most things" they wanted to, while 27.6 percent could do "some things" or "hardly anything" they like to do.

Among Utah residents who reported they limited their activities because of a health problem, arthritis was listed as the leading health problem that limited activity (16.0%), followed closely by back or neck problems (15.7%).

More than one third of adults with arthritis (36.0%) reported they needed help with their routine needs such as everyday household chores, doing necessary business, shopping, or getting around for other purposes compared to one in five adults without arthritis (22.9%).

When asked if arthritis or joint symptoms affected whether they worked and the type or amount of work they did, nearly one-third of persons with arthritis aged 18-64 (32.4%) said yes. Females in this age group were nearly twice as likely to report their arthritis or joint symptoms affected their ability to work (43.9%) compared to males (26.8%).

Arthritis Education Programs

When asked if they had ever taken an educational course or class to learn how to manage problems related to their arthritis or joint symptoms, 13.4 percent of persons with arthritis reported they had taken an educational course.

Arthritis Foundation Aquatics Program

This program uses gentle movement exercises in a heated pool to increase joint flexibility and range of motion to relieve stiffness, decrease arthritis pain, and restore or maintain muscle strength.

Arthritis Foundation Exercise Program

This program uses low impact exercises developed by physical therapists to relieve stiffness, decrease pain and restore or maintain muscle strength. These exercises can be done comfortably while sitting or standing.

Arthritis Foundation Self-Help Course

This six-week program was developed specifically for people with arthritis. Through group discussion, participants learn the importance of exercise, nutrition, taking medications and working with their doctor. The class also offers tips and techniques to better manage arthritis.

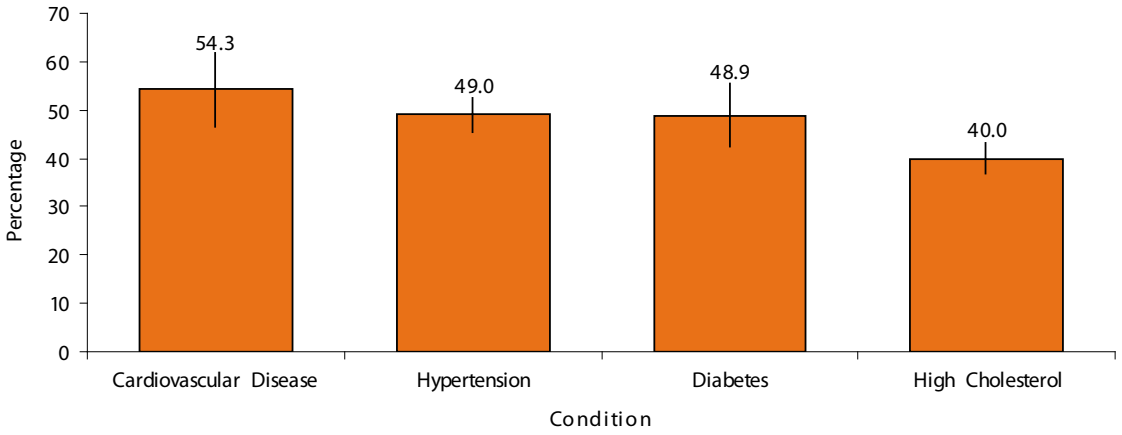
Arthritis and Coexisting Conditions

Arthritis is associated with other health conditions such as hypertension and cardiovascular disease, among others.[5] People with arthritis were likely to report one of the following selected conditions; cardiovascular disease (54.3%), hypertension (49.0%), diabetes (48.9%), and high cholesterol (40.0%). (See Figure 7)

People with arthritis need to be aware of the risks that coexisting health conditions may pose and then identify opportunities for improving their health.

7

Coexisting Conditions Among Persons with Arthritis, Utah, 2005



Source: Utah BRFSS Survey

Opportunities for Action

The impact of arthritis is greater in terms of health and disability than in terms of mortality. Arthritis control approaches need to focus on improving health-related quality of life and reducing disability. To improve health-related quality of life for Utah residents living with arthritis, the Utah Department of Health, the Arthritis Foundation, Utah/Idaho Chapter, and the Utah Arthritis Advisory Council have identified the following priorities:

- **Promote healthy lifestyles.** Public health activities that reach population groups with arthritis are needed. Evidence shows that physical activity improves health and decreases arthritis symptoms for most people. The Utah Department of Health and Arthritis Foundation, Utah/Idaho Chapter will continue to promote activities that inform adults about arthritis and its relationship to overweight/obesity and physical inactivity. In addition, physicians and other health professionals should promote healthy weight and regular, appropriate physical activity.

- **Increase early diagnosis and appropriate medical management of arthritis.** Although there is no cure for most types of arthritis, early diagnosis and appropriate medical management is important, especially for inflammatory types of arthritis. Early therapy for rheumatoid arthritis has been shown to decrease joint damage and improve outcomes. Patients with arthritis should be informed of their diagnosis to help them manage their disease and maintain a sense of control over their condition. Therefore, we must ensure that Utah adults are aware of early symptoms, support systems and resources for early diagnosis, treatment, management, and prevention of arthritis.

- **Increase the use of self-management strategies.** Programs that teach people with arthritis how to better manage their disease and optimize function can reduce both pain and health care costs. Evidence shows that participation in the Arthritis Foundation Self-Help Program decreases pain by 20 percent and decreases physician visits by 40 percent.[6] This beneficial effect remains even four years after participating in the course. Therefore, the Utah Arthritis Program and the Arthritis Foundation, Utah/Idaho Chapter seek to increase the number of Utahns who:
  - know the signs and symptoms associated with arthritis;
  - know there are self-management strategies that can relieve the pain, discomfort and disability associated with arthritis; and
  - participate in the strategies.

Conclusions

Data in this report were presented to assess the impact of arthritis on Utahns. By using these data, we can identify target populations that can benefit from activities that may reduce the incidence of arthritis in Utah. Through awareness, education, and action, the public health concerns noted in this report can be addressed. Ultimately, adults with arthritis should learn about treatment options, attend self-management programs, participate in regular physical activity, and maintain appropriate body weight to relieve their symptoms.

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Appendix A - Hospitalizations

Arthritis-related Inpatient Hospital Visits and Costs

Data from the 2005 Utah Hospital Inpatient Discharge Data confirm that arthritis is a major public health issue in Utah. There were 9,138 inpatient hospital visits with a primary diagnosis of arthritis in 2005, or 3.6 percent of all hospital visits. Osteoarthritis accounted for 7,128 hospital visits or over three-fourths (78.0%) of all hospital visits due to arthritis. The average inpatient length-of-stay for a patient with a primary diagnosis of arthritis was 3.8 days. Total charges for patients with a primary diagnosis of arthritis were $213,283,332, and the average charge per visit was $23,722. Hospital visits for arthritis-associated knee and hip replacements accounted for 70.9 percent or 6,476 of all hospital visits due to arthritis in 2005, for a total cost of $167,088,335, or 78.3 percent of all hospital charges for arthritis. (Table 1)

Age is associated with hospitalization of adults with arthritis. Persons 55 and older accounted for 78.5 percent of all arthritis-related hospital visits and 84.4 percent of knee and hip replacements due to arthritis. Total charges for persons 55 and older accounted for 80.1 percent of all hospital charges due to arthritis, and 83.8 percent of arthritis-associated knee and hip replacements. (See Table 2)

Table 1. Arthritis-related Inpatient Hospital Visits and Costs, Utah Residents, 2005

Diagnosis/Procedure	Hospital Visits*	Total Charges**	Average Charge	Average Length of Stay
Arthritis	9,138	$213,283,332	$23,722	3.8 days
Knee Replacement	4,784	$122,717,950	$26,044	3.5 days
Hip Replacement	1,692	$44,370,385	$26,617	3.6 days

Source: Utah Inpatient Hospital Discharge Data, Office of Health Care Statistics, Utah Department of Health

* Includes hospital visits with a primary diagnosis of arthritis using ICD-9 Codes 095.6, 095.7, 098.5, 136.1, 274, 277.2, 287.0, 344.6, 353.0, 354, 355.5, 357.1, 390.0, 391.0, 437.4, 443.0, 446, 447.6, 696.0, 710, 711, 712, 713, 714, 715, 716.0-716.6, 716.8-716.9, 719.0, 719.2-719.9, 720, 721, 725, 726, 727, 728.0-728.3, 728.6-728.9, 729.0-729.1, 729.4.
The ICD-9 Procedure Codes for Knee and Hip Replacements are 81.54 and 81.51, respectively.

** Factors affecting hospital costs include patient's health insurance, type of insurance, and billing procedures.

Table 2. Arthritis-related Inpatient Hospital Visits and Costs, Utah Residents Age 55 and Older, 2005

Diagnosis/Procedure	Hospital Visits*	Total Charges**	Average Charge	Average Length of Stay
Arthritis	7,176	$170,816,043	$24,215	3.8 days
Knee Replacement	4,056	$103,724,386	$25,970	3.6 days
Hip Replacement	1,409	$36,322,352	$26,131	3.6 days

Source: Utah Inpatient Hospital Discharge Data, Office of Health Care Statistics, Utah Department of Health

* Includes hospital visits with a primary diagnosis of arthritis using ICD-9 Codes 095.6, 095.7, 098.5, 136.1, 274, 277.2, 287.0, 344.6, 353.0, 354, 355.5, 357.1, 390.0, 391.0, 437.4, 443.0, 446, 447.6, 696.0, 710, 711, 712, 713, 714, 715, 716.0-716.6, 716.8-716.9, 719.0, 719.2-719.9, 720, 721, 725, 726, 727, 728.0-728.3, 728.6-728.9, 729.0-729.1, 729.4.
The ICD-9 Procedure Codes for Knee and Hip Replacements are 81.54 and 81.51, respectively.

** Factors affecting hospital costs include patient's health insurance, type of insurance, and billing procedures.

Appendix B - Definitions

Age-adjusted Prevalence - Age adjustment is used to compare two or more populations at one point in time. Age-adjusted rates are computed by applying age-specific rates in a population of interest to a standardized age distribution, in order to eliminate differences in observed rates that result from age differences in population composition. Age-adjusted rates should be viewed as a relative indicator rather than an actual measure of prevalence.

Arthritis - The CDC defines individuals with "arthritis" as those who report having been told by a doctor or other health professional they have some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia.

Body Mass Index (BMI) - Body Mass Index (BMI) is a number calculated from a person's weight and height. BMI is a reliable indicator of body fat and can be considered an alternative for direct measures of body fat. Additionally, BMI is an inexpensive and easy-to-perform method of screening for determining weight categories that may lead to health problems. (See Appendix D for a Body Mass Index Table)

Cardiovascular Disease - Persons who reported having had a heart attack or coronary heart disease were classified as having cardiovascular disease.

Coexisting Conditions - The existence of two or more health conditions in a person at the same time.

Confidence Interval - A confidence interval gives an estimated range of values that is likely to include a population parameter, the estimated range being calculated from a given set of sample data. The width of the confidence interval gives some idea about how uncertain the analyst is about the parameter. A very wide interval may indicate more data should be collected before anything definitive can be said about the parameter.

Days of Poor Mental Health - Respondents who answered seven or more days when asked, "Now, thinking about your mental health, which includes stress, depression and problems with emotions, for how many days during the past 30 days was your mental health not good?"

Days of Poor Physical Health - Respondents who answered seven or more days when asked "Now, thinking about your physical health, which includes physical illness and injury for how many days during the past 30 days, was your physical health not good?

Diabetes - Persons who reported a doctor had told them they have diabetes were classified as having diabetes.

Fair or Poor Health - Respondents who answered "fair" or "poor" when asked "Would you say in general your health is excellent, very good, fair, or poor?"

High Cholesterol - Persons who reported a doctor, nurse or other health professional had told them they had high cholesterol were classified as having high cholesterol.

Hypertension - Persons who reported a doctor, nurse or other health professional had told them their blood pressure was high were classified as having hypertension.

Inactive - Persons who did not report participating in either moderate or vigorous physical activity in the past 30 days were classified as inactive.

Insufficient Activity - Insufficient activity is some activity but not enough to meet recommendations.

Non-occupational Physical Activity- Non-occupational physical activity includes exercise, recreation and physical activity other than physical activity performed on the job. It includes leisure time activities such as running, calisthenics, golf, gardening, swimming, or walking.

Normal Weight - Normal weight is defined as a body mass index of 19-24.9. (See Appendix D)

Obese - Obese is defined as a body mass index greater than or equal to 30. (See Appendix D)

Overweight - Overweight is defined as a body mass index of 25-29.9. (See Appendix D)

Pain Affected Activities - Respondents who answered between 1-30 days when asked, "During the past 30 days for how many days did pain make it hard for you to do your usual activities, such as self-care, work or recreation?"

Physical Activity for Persons with Arthritis - The physical activity recommendation for persons with arthritis is 30 minutes of moderate physical activity at least three days per week.

Physical Activity for the General Public Recommended physical activity for the general population of adults is moderate physical activity at least five days per week for 30 minutes or more per day or vigorous activity at least three days per week for 20 minutes per day.

Prevalence - Prevalence is the number of cases or the percentage of the population reporting a disease or condition during a particular interval of time.

Risk Factors - Risk factors are characteristics, attributes or behaviors that increase a person's risk or chance of developing a disease.

Self-management/Self-help - Self-management or self-help is a set of beliefs and behaviors people with a chronic disease use to manage their condition to achieve or maintain their optimal health status or quality of life on their own.

Appendix C – Data Tables

Table 3. Crude Rate and Age-adjusted* Percentage of Adults Reporting Arthritis by Local Health District, Utah, 2003 & 2005

Health District	Number Affected	Crude Rate	95% CI** Range		Age-adjusted Percentage*	95% CI** Range	
Summit County	4,513	17.0%	12.5%	22.5%	22.4%	18.0%	27.4%
Utah County	50,531	17.0%	13.7%	20.8%	23.6%	20.7%	26.7%
Tooele County	62,593	18.2%	13.8%	23.5%	23.9%	20.7%	27.5%
Wasatch County	2,908	21.2%	16.0%	27.6%	24.8%	21.2%	28.8%
Salt Lake Valley	150,994	22.2%	20.1%	24.5%	24.8%	23.1%	26.5%
Bear River	23,190	22.8%	17.7%	28.9%	27.2%	23.5%	31.2%
Davis County	45,056	24.2%	20.2%	28.9%	27.0%	23.5%	30.7%
Southeastern	9,815	26.1%	20.9%	32.1%	28.2%	24.6%	32.2%
Weber-Morgan	40,856	26.5%	22.1%	31.4%	27.6%	24.4%	31.1%
TriCounty	7,706	26.6%	20.8%	33.3%	27.3%	23.5%	31.2%
Southwest	37,200	28.5%	22.8%	35.0%	27.6%	23.7%	31.9%
Central Utah	15,612	31.7%	25.4%	38.8%	30.8%	26.8%	35.1%
State Total	395,088	22.7%	21.3%	24.0%	25.7%	24.6%	26.7%

Source: Utah 2003-2005 BRFSS Survey, Age-adjusted to the U.S. 2000 standard population

Table 4. Prevalence of Arthritis by Age Group and Gender, Utah, 2005

Male	Percentage	95% CI** Range	
18-34	7.8%	5.7%	10.6%
35-49	18.1%	14.6%	22.3%
50-64	35.3%	30.5%	40.4%
65-74	43.0%	35.8%	50.6%
75+	40.8%	32.5%	49.8%
Female	**Percentage**	**95% CI** Range**	
18-34	7.7%	5.7%	10.4%
35-49	22.1%	18.9%	25.6%
50-64	45.2%	40.7%	49.8%
65-74	63.0%	56.5%	69.1%
75+	60.0%	53.0%	66.7%

Source: 2005 Utah BRFSS Survey

* Age adjustment is used to compare two or more populations at one point in time. Age-adjusted rates are computed by applying age-specific rates in a population of interest to a standardized age distribution, in order to eliminate differences in observed rates that result from age differences in population composition. Age-adjusted rates should be viewed as a relative indicator rather than an actual measure of prevalence.

** A confidence interval (CI) gives an estimated range of values that is likely to include a population parameter, the estimated range being calculated from a given set of sample data. The width of the confidence interval gives an idea about how uncertain we are about the parameter. A very wide interval indicates more data should be collected before anything definitive can be said about the parameter.

Appendix D – Body Mass Index Table

To use the table, find a height in the first row and the weight in the column. The number in the left column is the BMI at that height and weight. The score is valid for men and women but does have the following limitations:

- It may **overestimate** body fat in persons who have a muscular build.
- It may **underestimate** body fat in persons who have lost muscle mass.

BMI Categories

- Normal Weight = 19-24.9
- Overweight = 25-29.9
- Obesity = 30 to 39.9
- Extreme Obesity = 40 or greater

		Height (inches)																			
	BMI	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76
Normal	19	91	94	97	100	104	107	110	114	118	121	125	128	132	136	140	144	148	152	156
	20	96	99	102	106	109	113	116	120	124	127	131	135	139	143	147	151	155	160	164
	21	100	104	107	111	115	118	122	126	130	134	138	142	146	150	154	159	163	168	172
	22	105	109	112	116	120	124	128	132	136	140	144	149	153	157	162	166	171	176	180
	23	110	114	118	122	126	130	134	138	142	146	151	155	160	165	169	174	179	184	189
	24	115	119	123	127	131	135	140	144	148	153	158	162	167	172	177	182	186	192	197
Overweight	25	119	124	128	132	136	141	145	150	155	159	164	169	174	179	184	189	194	200	205
	26	124	128	133	137	142	146	151	156	161	166	171	176	181	186	191	197	202	208	213
	27	129	133	138	143	147	152	157	162	167	172	177	182	188	193	199	204	210	216	221
	28	134	138	143	148	153	158	163	168	173	178	184	189	195	200	206	212	218	224	230
	29	138	143	148	153	158	163	169	174	179	185	190	196	202	208	213	219	225	232	238
Obese	30	143	148	153	158	164	169	174	180	186	191	197	203	209	215	221	227	233	240	246
	31	148	153	158	164	169	175	180	186	192	198	203	209	216	222	228	235	241	248	254
	32	153	158	163	169	175	180	186	192	198	204	210	216	222	229	235	242	249	256	263
	33	158	163	168	174	180	186	192	198	204	211	216	223	229	236	242	250	256	264	271
	34	162	168	174	180	186	191	197	204	210	217	223	230	236	243	250	257	264	272	279
	35	167	173	179	185	191	197	204	210	216	223	230	236	243	250	258	265	272	279	287
	36	172	178	184	190	196	203	209	216	223	230	236	243	250	257	265	272	280	287	295
	37	177	183	189	195	202	208	215	222	229	236	243	250	257	265	272	280	287	295	304
	38	181	188	194	201	207	214	221	228	235	242	249	257	264	272	279	288	295	303	312
	39	186	193	199	206	213	220	227	234	241	249	256	263	271	279	287	295	303	311	320
Extreme Obesity	40	191	198	204	211	218	225	232	240	247	255	262	270	278	286	294	302	311	319	328
	41	196	203	209	217	224	231	238	246	253	261	269	277	285	293	302	310	319	327	336
	42	201	208	215	222	229	237	244	252	260	268	276	284	292	301	309	318	326	335	344
	43	205	212	220	227	235	242	250	258	266	274	282	291	299	308	316	325	334	343	353
	44	210	217	225	232	240	248	256	264	272	280	289	297	306	315	324	333	342	351	361
	45	215	222	230	238	246	254	262	270	278	287	295	304	313	322	331	340	350	359	369
	46	220	227	235	243	251	259	267	276	284	293	302	311	320	329	338	348	358	367	377
	47	224	232	240	248	256	265	273	282	291	299	308	318	327	338	346	355	365	375	385
	48	229	237	245	254	262	270	279	288	297	306	315	324	334	343	353	363	373	383	394
	49	234	242	250	259	267	278	285	294	303	312	322	331	341	351	361	371	381	391	402
	50	239	247	255	264	273	282	291	300	309	319	328	338	348	358	368	378	389	399	410
	51	244	252	261	269	278	287	296	306	315	325	335	345	355	365	375	386	396	407	418
	52	248	257	266	275	284	293	302	312	322	331	341	351	362	372	383	393	404	415	426
	53	253	262	271	280	289	299	308	318	328	338	348	358	369	379	390	401	412	423	435
	54	258	267	276	285	295	304	314	324	334	344	354	365	376	386	397	408	420	431	443

Body Weight (pounds)

Source: Adapted from Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults: The Evidence Report